

REMARKS

Claims 2-40 are pending in the application. Claims 2, 4, 5, 7, 9, 15, 18, 21-22, 24-25, 27, 31, 33-35, and 37 are amended herein.

In response to par. 2 of the Office Action, claims 6 and 15 have been placed in independent form incorporating all limitations of the base claim and any intervening claim. Accordingly, these claims should now be allowable.

In response to pars. 3-52 of the Office Action, each of the rejected independent claims (2, 9, 21, 33, 35, 37) recites or has been amended to recite one or more aspects relating to detail vectors that are neither taught nor disclosed by Pulli or Sargent, singly or in combination.

Claim 2, for example, recites associating detail vectors with vertices of child polygons, where one or more of the detail vectors represent the shape of the limit surface at a point corresponding to the associated vertex. Nothing in Pulli or Sargent teaches or describes detail vectors at all, much less detail vectors with these particular characteristics.

The Examiner's claim that Col. 9, lines 43-45, or Col. 7, lines 27-32 of Pulli describes detail vectors and detail vectors with these characteristics is untenable. Col. 9, lines 43-45, for example, merely refers to "connectivity information" of two-dimensional array 501, with no indication this information has anything at all to do with the limit surface of a mesh representation, and certainly without indicating this information has anything to do with the shape of the limit surface at points corresponding to the associated vertices of the child polygons.

Similar deficiencies are present regarding the passage at Col. 7, lines 27-32. This passage merely refers to a limit surface that is "theoretically" possible. Nothing suggests actually forming this limit surface or actually forming detail vectors representing the shape of this surface at points corresponding to associated vertices. And nothing suggests associating these vectors, once formed, to corresponding vertices of child polygons.

Finally, the Examiner's claim, that this passage teaches or suggests forming edges that connect vertices or limit points on the limit surface, and that these edges are detail vectors (page 8, par. 22), is wholly without basis. The passage says absolutely nothing like that, and even if it did, edges merely connecting points on the limit surface do not represent the shape of the limit surface in any meaningful way, and there is still nothing that suggests forming these detail

vectors at points on the limit surface corresponding to the vertices of child polygons, and then associating these detail vectors with the child vertices.

As nothing in Pulli or Sargent teaches or suggests the detail vectors as recited in claim 2, the obviousness rejection of that claim (as well as claims 3-5, 7-8, 10-14, 16-20, 26, 28, and 38-40 that depend, directly or indirectly, from claim 2) cannot be sustained under well-settled Federal Circuit law holding there must be a demonstrable motivation or suggestion in the prior art for each of the claim limitations. *E.g.*, *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); *In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981); *In re Mills*, 916 F.2d 680, 682 (Fed. Cir. 1990). This requirement, the Federal Circuit also holds, must be rigorously applied to avoid the risk of engaging in hindsight reconstruction by impermissibly using the claims as a blueprint for the rejection rather than the teachings of the references themselves. *See Grain Processing Corp. v. American Maize-Products Corp.*, 840 F.2d 902, 907 (Fed. Cir. 1988); *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967), *cert denied*, 389 U.S. 1057 (1968).

Turning to claim 9, that claim recites the step of applying at least one detail vector to adjust the location of its associated child polygon vertex. Again, there is nothing in Pulli or Sargent, singly or in combination, which teaches or suggests this step. The Examiner claims that Col. 13, lines 3-11 of Pulli teaches this step, but that is simply not true. This passage simply refers to the process of subdividing triangles in a higher level mesh representation to achieve child polygons in a lower level mesh representation. Nothing teaches or describes going beyond that to associate detail vectors with one or more of the newly formed child vertices and then adjusting the locations of these vertices using the detail vectors. Therefore, the obviousness rejection of this claim cannot be sustained.

Turning to claim 21, that claim (and claims 22-25, 27, 29-32, which depend, directly or indirectly, from claim 21) is allowable for the same reasons as claim 2, namely, the lack of any teaching or suggestion in the prior art of associating detail vectors with child polygon vertices,

where a detail vector represents the shape of the limit surface at a point corresponding to the associated child polygon vertex.

Turning to claim 33, that claim is a “step-plus-function” counterpart to claim 2, and is allowable (along with claims 34 and 36, which depend, directly or indirectly, from claim 33) for the same reasons as claim 2.

Turning to claim 35, that claim is a “step-plus-function” claim corresponding to claim 9, and is allowable for the same reasons as claim 9.

Turning to claim 37, that claim is allowable for the same reason as claim 2.

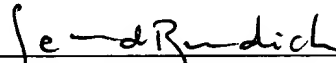
In response to par. 54 of the Office Action, Applicant has amended claims 18 and 21 to recite a representation of an object surface that is “tangibly embodied in a processor readable medium.” As processor readable media are plainly within the statutory classes of patentable subject matter, *see In re Beauregard*, 53 F.3d 1583, 1584 (Fed. Cir. 1995) (Patent Office recognizing that computer programs embodied in a tangible medium are patentable subject matter under § 101), this rejection must be withdrawn.

In view of the above, Applicant believes that all claims are now allowable. The Examiner is therefore earnestly solicited to allow these claims and pass this Application to issuance.

In papers submitted concurrently with this Response, Applicant has authorized the USPTO to charge the fee under 37 CFR 1.17(a)(1) for a one-month extension of time. Applicant believes no other fees are due for filing this Response; however, if any additional fees are in fact due, the Commissioner is hereby authorized to charge the same to Howrey Deposit Account No. **08-3038**, referencing Howrey Dkt. No. **01339.0005.NPUS02**.

Respectfully submitted,

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